Traffic Implications of the Present and Future

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The highway traffic situation is bad and rapidly getting more out of hand. We must face up to the situation and to the need, though we don't seem to want to because some of our problems, such as the main one of financing, are unpleasant and because on numerous matters drastic measures are increasingly more necessary and we have not kept the public properly informed. Another reason why we seem to prefer to keep our heads buried in the sand is that we need to go to the new, untried and unproved.

Often our sights are not high enough for the problem and needs we face in this dynamic motor era, and all too often bold leadership is very rare. Yet, we must face up to the facts and implications of the automotive revolution in the midst of which we find ourselves.

Highway transportation is so much a part of our way of life—is so vitally important to it and, while highway transportation is much more important in our American pattern than is generally realized, the public is becoming much better educated and is increasingly demanding progressive action.

CHANGING TRAFFIC PATTERN

Let us look for a moment at some of the great changes that are taking place. The very pattern of our cities is being changed by motor vehicles, people are moving to the suburbs, industries are being dispersed, central business districts of our cities are being greatly modified, and we are seeking, so far as we can, to redevelop them to fit the needs of the modern motor age. There are new type shopping areas developing in the suburban areas. Freeway type of traffic arteries, where traffic is heavy enough to justify them, are being resorted to.

Motor vehicle registrations (now some 53,000,000) are still growing rapidly. Not only are registrations increasing, but miles driven per car per year have been growing rapidly and, in fact, have almost doubled in the last thirty years. However, since 1946, when average annual mileage was just under 10,000 per year, there has been a slight drop-off. In 1950, the average annual mileage was 9,400 per year.

In 1950, traffic was 50 per cent above a decade earlier, that is in vehicle miles, and a recent study by the Automobile Manufacturers Association showed that 92 per cent of passenger cars are used each week for work, for shopping, or for both.

PROBLEMS OF THE FUTURE

Now, what about the future? No one knows, and heretofore most predictions have been wrong, generally wrong by estimating too low.

There is no evidence of slacking off at the present time. The best analysis I know of is one by E. H. Holmes, chief, Highway Transport Research Branch, Bureau of Public Roads. Mr. Holmes concludes that traffic is part of our economy and grows with it. Hence, assuming a continuing strong economy. Mr. Holmes predicts a traffic growth of some 4 per cent per year for the next 15 or 20 years. In ten years then that would mean almost a 50 per cent increase in automobile traffic.

There are many factors involved in this over-all picture. For example, the average life of the scrapped car doubled in the last 20 years. In 1930, automobiles were scrapped at an average age of seven years. In 1950, the average age of the automobile scrapped was 14 years.

Another factor with important implications is the rapid growth of trucks and truck use. Since the war there has been a very rapid increase, and now one-fifth of the motor vehicles on the road are trucks. Moreover, the trend toward larger and heavier trucks has been increasing, though not in the very largest combinations as yet.

What are some of the implications of this increase in the use of trucks? Clearly, with trucking so highly important in our economy and growing more so, we need to build main roads to stand up under reasonably heavy loads, and we need to know what is reasonable research. Research, of course, must get into the economics of truck operations. It must also get into the effects on roads and on traffic. Happily, some basic testing has been done,

such as the Maryland Road Test which many of you know about, and more are planned.

There must, however, be measures taken and carried out vigorously to protect the roads that we now have because we are going to live with them for a long time to come. Overloading, for example, has been very bad and its effects on other than main roads is something we need to know more about. Excessive overall legal load limits and especially axle load limits must be fought off in the legislatures. The standard of the American Association of State Highway Officials of 18,000 pound axle loading should be held, at least until researches show the appropriateness of some change.

HIGHWAY SPEEDS

What about highway speeds, and what about trends in motor vehicle speeds? What is being done about speeds, and how many studies are being made to determine the effects of speeds on accidents and on other matters?

In 1950, 28 states reported making 819 speed studies on main rural highways. Fourteen states provided 1951 data covering the first half of that year.

Average speeds, that is in the 40-50 mile per hour range, except for World War II effects, have varied but little since 1942, though a slight upward trend in truck speeds is evident. Also the percentage of trucks exceeding 50 miles per hour increased appreciably.

What's going to happen to speeds in the future? Two of my respected associates predict substantial increases in speeds. On superior types of highways—freeways, expressways, turnpikes, divided highways—it seems likely that higher speeds will prevail.

There seems to be some lessening of the differentials in speeds, that is, speeds are more nearly uniform. But as to considerable speed increases otherwise, I cannot see them in the near future, though some slight upward trend seems possible as cars and roads are further improved. Why do I make this prediction? For a long time many sections of even the main highways will not physically warrant higher speeds and most drivers seem to have a rather good sense of reasonable speed.

Human, that is physical and emotional characteristics, do not seem to me to justify higher speeds on most highways. Reaction time, several characteristics of vision, judgment, such as to distance,

safety of overtaking and passing, are examples of human limiting factors.

In constructing new highways, however, we most assuredly should design for much higher speeds than the present averages, and engineers are doing so. Even on less important new roads the same thing should apply because of the importance of protecting the small but significant percentage of faster drivers.

HIGHWAY ACCIDENTS

Now, what about the accident picture? 1951 brought the millionth fatality and the thirty millionth traffic casualty.

In 1951, there was an increase in fatalities, though not a large increase and even in terms of the fairest measure, deaths in terms of vehicle miles of traffic, there was a slight upswing.

Frankly, I was surprised that the increases were not larger because of (1) the deteriorating condition of our roads, (2) losses of key personnel to the armed forces and industry, (3) inadequate budgets for traffic safety personnel and programs, (4) a seeming increased public apathy or lessened public demand for accident reductions, (5) increasing numbers of drivers being licensed who are not adequately prepared for driving under today's conditions.

Over a long period of time, however, the trend has been rather good. Mileage death rate in 1950 was half of what it was in 1936. It was 7.5 deaths per hundred million vehicle miles in 1950 as compared with 15.1 in 1936.

In the future, it's going to be harder to push the fatality rate down. It can be done if it is sufficiently wanted to pay the price of doing it.

That price includes: (1) engineering acceptance of responsibility for design and maintenance features as significant accident factors; (2) better driver licensing, and driver improvement programs after driver is licensed; (3) better and more extensive driver education and training; (4) more and better supervision and controls with emphasis on some of the really important factors, such as alcohol; (5) more positive and determined leadership by top executives of states, counties, municipalities; (6) better accident reporting and better accident analysis, and research into factors now neglected; (7) much better public information.

NEEDS VS. FACILITIES

The most serious aspect of this whole traffic and highway transportation picture is the gigantic and ever-widening gap between

highway transportation needs and highway transportation facilities. This should be, and I am sure is, cause for the deepest of concern among all of us.

There isn't much doubt that new highway traffic facilities are going to be necessary, but how are they going to be financed?

A study made by the Brookings Institution showed that less than 10 cents out of every dollar spent on highway transportation goes into roads. Most of the money goes into the car, gasoline, maintenance and repair, garaging, insurance, and tires. Yet, Automobile Manufacturers Association's "Facts and Figures" shows 29 cents in taxes out of every automobile dollar. We need to get more of that 29 cents for highways.

I mentioned the widening gap between traffic needs and the roads that now exist. How can that gap be closed? First, cut out diversion where it exists. Second, toll financing is an idea being pushed to a considerable extent. There are over 600 miles of toll roads in operation, if you class the Merritt Parkway as a toll facility. The New York Thruway, some 486 miles, is under construction and some parts of it are open.

Twenty states have enabling legislation permitting the establishment of toll roads and still others are considering it. At best, however, the toll facility is only a partial answer and a rather small part in some ways. Third, bond financing; fourth, increases in gasoline taxes, and this is happening in a number of states; fifth, return to the basic principle of the various beneficiaries sharing in paying. For example, the property tax should pay, to a considerable extent or to a considerably larger extent, for local rural roads.

Urban areas account for about half of all of the vehicle miles of traffic, and they are especially hard hit in this squeeze. Their main arteries are very costly. They, in general, do not receive their rightful share of state and federal aid. The implication is very clear. This segment must organize more effectively and demand its fair share.

What is the plight of our main rural highways? In 1950, only half of state highway user taxes went to construction, maintenance and administration of state highway systems, and not all roads on state highway systems are really main arteries. If we consider the large and growing maintenance costs, the proportion of the highway user tax dollar going into main highway construction is mighty inadequate.

What are the traffic implications of this neglect? An increasing total death rate is one. Already the records are beginning to show bad trends, and they can be expected to suffer increasingly from neglect of needs and traffic increases.

There is increasing congestion, bottlenecks in many places. These conditions are familiar to all of us.

And now I will stick my neck out! If we persist in failing so grossly to provide for road and terminal needs, we shall find out what the wrath of our people can be. They will not willingly cut down on the use of motor vehicles, which are so important a part of our way of life.

Now, let us talk about the automobile itself for a moment. We need to give it relatively little attention for, in general, the automotive industry is way out ahead of road building, though often lacking in knowledge of what should be built. They are out ahead in legislation, traffic engineering, and education.

The automotive industry has proved the value of research. They have produced wonders, such as safety glass, better tires, four-wheel brakes, power steering, lower center of gravity, and greatly increased engine efficiency, automatic transmissions, and I could name many, many others.

Of course, there are still areas for improvement. With greater night driving, one area might be cited. We ought to be able to see better at nights, we ought to have better headlights, we ought to eliminate glare or at least greatly reduce it. There ought to be more shock-absorbing features in the automobile, there should be ways of reducing costs of repairs and maintenance.

What can be seen ahead? In cities, I'd like to ask all of you, isn't there likely to be an increasing desire for smaller motor vehicles as congestion grows and parking space is harder to find, taxes and car costs rise? Maybe, what I am talking about is sort of a glorified motor scooter with a closed in compartment, for the home-to-work group.

THE HUMAN ELEMENT

Now, let's talk about the human element for a moment. More and more people are driving. Half of the people over 16 years of age, and for males, ages 20 to 44 years, the figure is 84 per cent.

Humans are very slow to change, yet they can do so. Of course, there are some human factors that cannot be improved—reaction time, vision, certain elements of distance judgment, alertness.

The age of the population as a whole is a decisive factor. In 1910, less than 7 per cent of the population was over 60 years of age. In 1950, over 12 per cent of the population was over 60 years of age. In one state, I am told, one-fourth of the drivers now are over 60. Yet, less than a decade ago, the percentage was 15 per cent. This factor has tremendous implications, but it is receiving far too little attention.

We need to study older drivers, older pedestrians. We need to analyze their problems and devise correctives or controls. For example, we must greatly improve traffic control devices.

What does all of this add up to? America must really wake up and face its highway transportation problem. We need many, many more facts. We need a lot more research. We have a tremendous financing problem which we must face up to.

There is need for greatly increased emphasis on operations and, hence, on traffic engineering.

There must be inter-group cooperation to achieve major objectives. There is no place or time for petty bickering.

People are awakening, and I think they will do something about it. Perhaps, some of the remedies will seem a bit drastic and will be slow to be accepted, but I believe as years go by some of the measures which we are proposing and which now seem drastic will be accepted as commonplace.